

AD-A102 756 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2  
193040 MLRS, MISSILE NUMBERS BK-003, V01-005, V01-006, ROUND NU--ETC(U)  
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METEOROLOGICAL DATA REPORT

19304D MLRS

Missile Numbers BK-003, V01-005, V01-006  
Round Numbers V-155/MD-22, V-156/MD-23, V-157/MD-24  
19 June 1981

by

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Program Support Coordinator  
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AVN Number 349-9568



ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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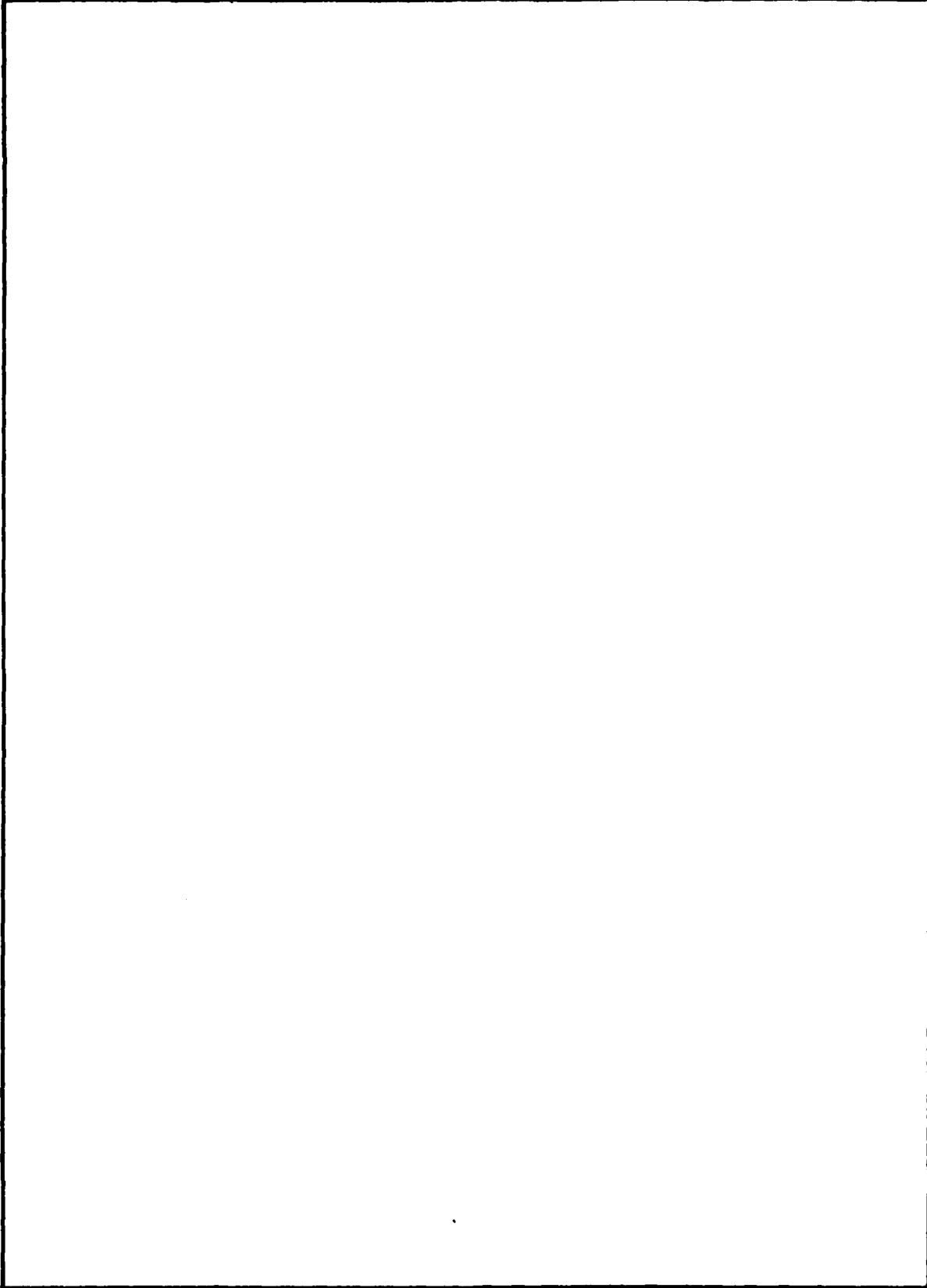
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## CONTENTS

	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
LAUNCH AREA MAP-----	2
GENERAL AREA MAP-----	3
 TABLES:	
1. Surface Observation taken at 1730 MDT at LC-33-----	4
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1730 MDT-----	5
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1730 MDT-----	5
4. T-Time Pilot-Balloon Measured Wind Data-----	6
5. Aiming and T-Time Computer Met Messages-----	7
6. WSD Significant Level Data at 1435 MDT-----	8
7. WSD Upper Air Data at 1435 MDT-----	9
8. WSD Mandatory Levels at 1435 MDT-----	14
9. LC-37 Significant Level Data at 1530 MDT-----	15
10. LC-37 Upper Air Data at 1530 MDT-----	16
11. LC-37 Mandatory Levels at 1530 MDT-----	19
12. WSD Significant Level Data at 1630 MDT-----	20
13. WSD Upper Air Data at 1630 MDT-----	21
14. WSD Mandatory Levels at 1630 MDT-----	24
15. LC-37 Significant Level Data at 1730 MDT-----	25
16. LC-37 Upper Air Data at 1730 MDT-----	26
17. LC-37 Mandatory Levels at 1730 MDT-----	29

Accession For	Date	Serial	Category	Type	Size	Weight	Comments
(Signature)							

## INTRODUCTION

19304D MLRS, Missile Numbers BK-003, V01-006, and V01-006, Round Numbers V-155/MD-22, V-156/MD-23, and V-157/MD-24, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1730:01, 1730:05, and 1730:10 MDT, 19 June 1981. The scheduled launch times were 1730, 1730:04.5, and 1730:09 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observation:

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air:

(1) Low level wind data were obtained from Pilot-Balloon observations at:

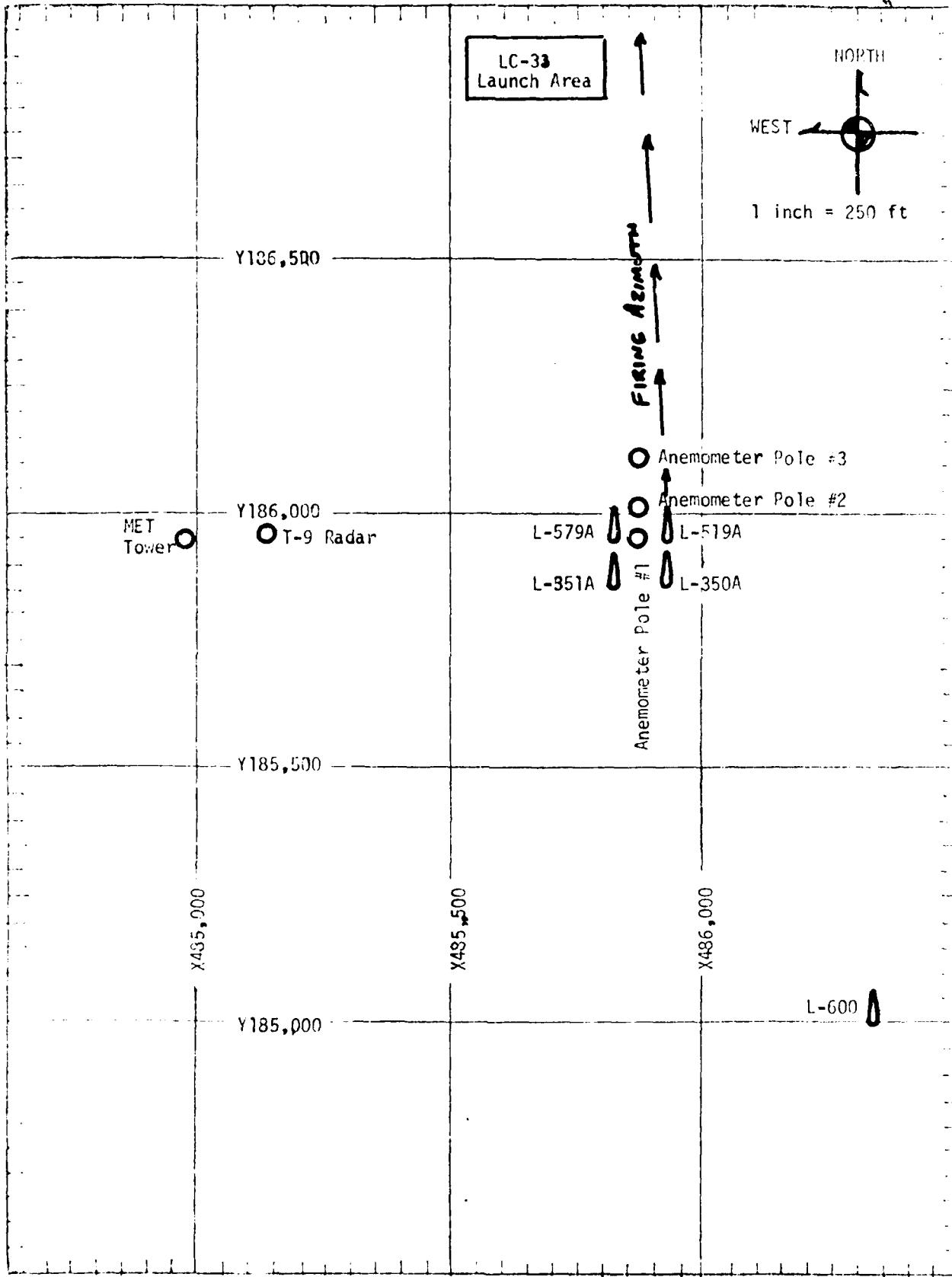
### SITE AND ALTITUDE

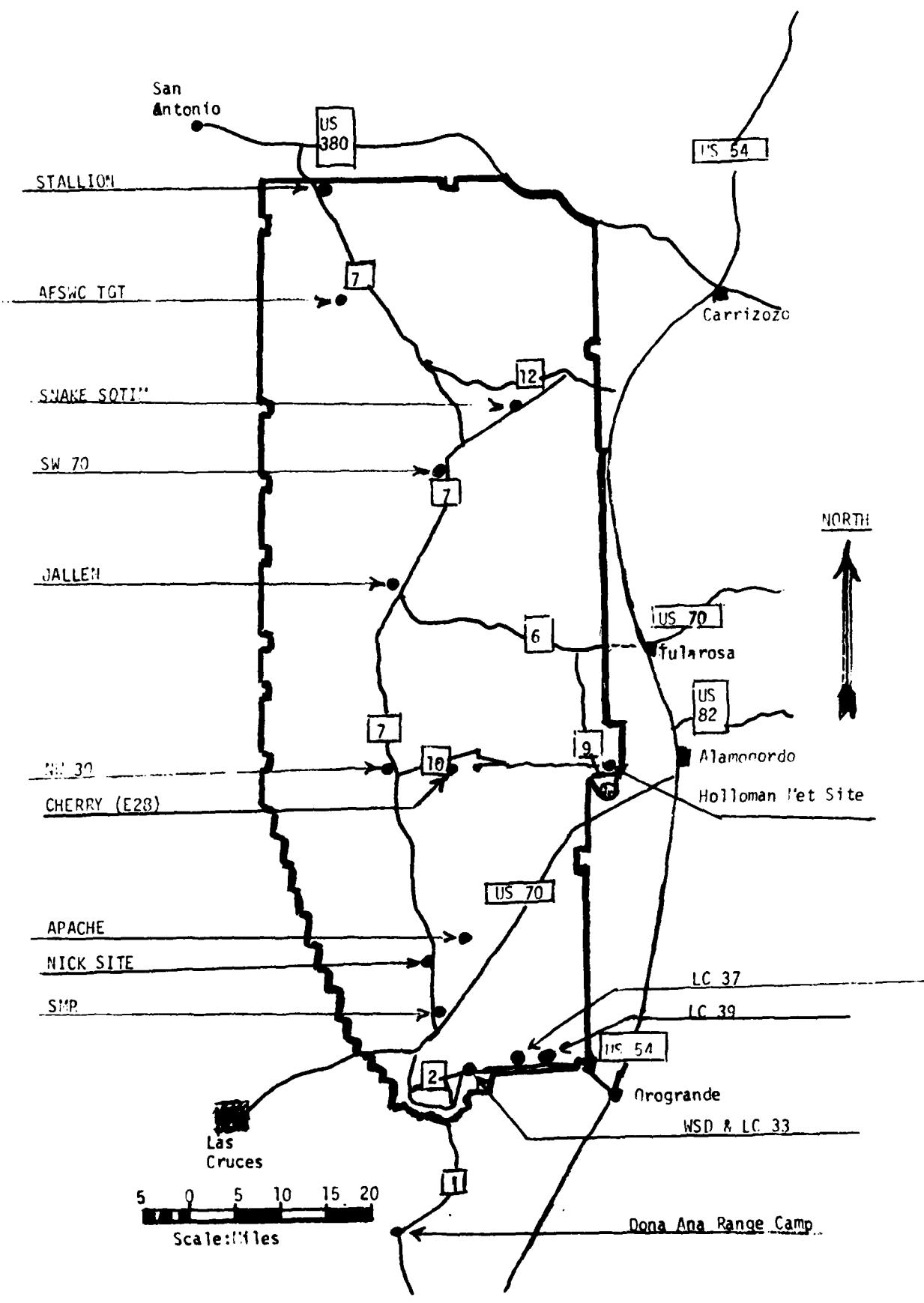
LC-33	2 KM
NICK	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

### SITE AND TIME

WSD	1435 MDT
LC-37	1530 MDT
WSD	1630 MDT
LC-37	1730 MDT





## PROJECT SURFACE OBSERVATION

TABLE 1

DATE 19 June 1981  
DAY MONTH YEAR

TIME H D I	PRESSURE mb	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	MIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1730	876.3	38.0	-7.3	5	974	200	06	622

OBSTRUCTIONS TO VISIBILITY	CLOUDS								REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		AMT	TYPE	
	AMT	TYPE	HGT	AMT	TYPE	HGT	AMT	TYPE	HGT
	0	CU	8000	-	-	-	-	-	-
									Few CU ovr Mtns NE-SE

## PSYCHROELRIC COMPUTATION

TIME:	MDT	1730	
DRY BULB TEMP.		38.0	
WET BULB TEMP.		14.7	
WET BULB DEP.		23.3	
DEW POINT		-7.3	
RELATIVE HUMID.		5	

TABLE 2

## LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

1730 MDT

19 June 1981

POLE #1			POLE #2			POLE #3		
T-TIME	DIR	SPEED	T-TIME	DIR	SPEED	T-TIME	DIR	SPEED
SEC	DEG	KTS	SEC	DEG	KTS	SEC	DEG	KTS
X485,874.29	X485,874.93	X485,877.22						
Y185,958.90	Y186,012.00	Y186,116.46						
H4018.74	H4033.57	H4063.90						
38.7 ft. AGL	53.0 ft. AGL	13.6 ft. AGL						
T-30	279	03	T-30	285	06	T-30	283	05
T-20	275	03	T-20	289	05	T-20	270	04
T-10	282	03	T-10	306	05	T-10	273	03
T0.0	300	02	T0.0	309	04	T0.0	284	02
T+10	300	01	T+10	330	04	T+10	286	01

TABLE

3

## LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME	SEC	DIR DEG	T-TIME	SEC	DIR DEG
		SPEED KTS			SPEED KTS
T-30		315	02	T-30	308
T-20		314	02	T-20	285
T-10		288	02	T-10	262
T0.0		259	02	T0.0	241
T+10		243	04	T+10	240

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 102 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME	SEC	DIR DEG	T-TIME	SEC	DIR DEG
		SPEED KTS			SPEED KTS
T-30		252	04	T-30	228
T-20		252	04	T-20	236
T-10		252	03	T-10	236
T0.0		243	04	T0.0	234
T+10		237	04	T+10	237

TABLE 4T-TIME PILOT-BALLOON MEASURED WITH T-10  
DATE 19 June 1981

SITE: LC-33  
 TIME: 1730 MDT  
 WSTM COORDINATES:  
 X= 485,135.76  
 Y= 185,919.24  
 H= 3988.57

SITE: NICK  
 TIME: 1730 MDT  
 WSTM COORDINATES:  
 X= 470,734.56  
 Y= 255,775.64  
 H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	270	03	SURFACE	340	03
150	275	03	150	299	09
210	277	03	210	309	10
270	279	04	270	290	08
330	280	04	330	275	06
390	280	04	390	253	05
500	280	05	500	258	06
650	280	06	650	278	09
800	281	05	800	307	09
950	284	05	950	331	07
1150	282	05	1150	313	09
1350	281	05	1350	333	09
1550	281	04	1550	330	11
1750	287	04	1750	335	12
2000	283	04	2000	337	11

Data obtained from Single Theodolite  
tracked Pilot-Balloon observation.

Data obtained from T-9 radar tracked  
Pilot-Balloon observation.

TABLE 5AIMING AND T-Time COMPUTER MET MESSAGES  
19 June 1981

WSD	1435 MDT	LC-37	1530 MDT	WSD	1630 MDT
METCM1324064		METCM1324063		METCM1324064	
192060122878		192150124874		192250122877	
00213002	31050878	00373005	31300874	00320007	31220877
01286003	30970868	01421007	31010865	01353020	31120867
02223001	30750845	02418007	30750841	02303018	30860843
03383003	30360808	03418004	30370804	03319016	30470807
04394003	29870763	04478003	29900760	04326008	29970762
05459006	29370720	05621002	29440718	05350004	29400720
06398009	28900680	06427002	28920677	06389003	28900679
07397008	28440640	07448012	28420638	07394010	28460640
08446007	27980603	08453007	27920601	08395008	28000602

LC-37	1730 MDT
METCM1324063	
192350124873	
00356005	31110873
01464010	31040864
02344009	30850840
03370010	30460804
04392010	29960760
05301007	29450717
06389006	28930677
07432007	28420637
08456010	27930600

STATION ALTITUDE 3989.00 FEET MSL  
19 JUNE 81 1435 HRS MDT  
ASCENSION NO. 399

SIGNIFICANT LEVEL DATA

17000<sub>c</sub> 0.599

WHITE SANDS

EQUATORIAL COORDINATES  
52°40'43" LAT N  
106°37'33" LONG W  
106°37'33" LONG W

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENIGRADE	REL. HUM. PERCENT
877.8	3989.0	36.9	14.0
850.0	4047.4	35.1	25.0
736.8	9097.7	21.4	29.0
700.0	10544.8	17.2	31.0
627.6	1553.0	0.1	31.0
534.6	17435.3	-2.9	39.0
500.0	19569.3	-5.9	28.0
486.2	20290.2	-6.0	25.0
400.0	25200.6	-17.5	30.0
346.4	29111.9	-27.5	38.0
300.0	32009.9	-35.3	34.0
265.4	30868.8	-39.8	31.0
250.0	36204.2	-42.7	
226.4	38391.4	-46.4	
200.0	41074.9	-51.4	
172.6	44187.2	-57.3	
150.0	47073.2	-63.1	
127.2	51384.3	-67.4	
106.2	55933.3	-71.8	
100.0	55106.8	-70.8	
70.0	62286.9	-64.9	
50.0	69109.1	-56.2	
42.8	72371.2	-56.5	
32.8	78066.5	-47.8	
50.0	80018.8	-46.8	
23.0	85860.3	-45.8	
20.0	88967.5	-41.9	

STATION ALTITUDE 3989.00 FEET MSL  
19 JUNE 81 1435 HRS MDT  
ASCENSION NO. 399

UPPER AIR DATA  
17000±0.599  
WHITE SANDS

GEODETIC COORDINATES  
32°40'04.3" LAT DEG  
106.37033 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CURDLIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
3989.0	877.8	36.9	5.0	14.0	982.6	687.3	120.0	1.9
4000.0	877.5	36.9	5.1	14.1	982.3	687.2	120.1	1.9
4500.0	862.9	34.9	8.5	19.9	971.1	685.4	123.6	1.6
5000.0	848.5	33.0	10.3	25.1	960.2	683.5	129.1	1.3
5500.0	834.0	31.5	9.4	25.5	948.4	681.9	187.5	1.0
6000.0	819.7	30.1	8.5	26.0	936.8	680.2	214.2	2.0
6500.0	805.7	28.7	7.6	26.5	925.3	678.5	215.9	2.9
7000.0	792.0	27.3	6.7	27.0	914.0	676.9	210.1	2.5
7500.0	776.5	25.9	5.7	27.5	902.8	675.2	219.7	2.2
8000.0	765.2	24.5	4.8	27.9	891.8	673.5	220.3	2.0
8500.0	752.1	23.1	3.8	28.4	880.9	671.9	225.9	2.5
9000.0	739.3	21.7	2.8	28.9	870.2	670.2	248.7	4.4
9500.0	726.4	20.2	1.9	29.6	859.4	668.5	250.0	5.7
10000.0	713.6	18.8	1.0	30.2	848.6	666.8	248.6	6.7
10500.0	701.1	17.3	.0	30.9	838.0	665.1	237.6	7.2
11000.0	688.6	16.0	-1.1	31.0	827.1	663.5	228.9	8.1
11500.0	676.2	14.6	-2.3	31.0	816.2	661.8	224.6	9.3
12000.0	664.1	13.3	-3.5	31.0	805.5	660.2	224.2	9.0
12500.0	652.2	11.9	-4.6	31.0	794.9	658.6	223.5	8.3
13000.0	640.5	10.6	-5.8	31.0	784.5	657.0	224.0	7.7
13500.0	629.0	19.2	-7.0	31.0	774.3	655.4	228.9	7.5
14000.0	617.4	7.8	-7.9	31.8	763.8	653.7	238.5	7.2
14500.0	605.9	6.4	-8.7	32.8	753.4	652.1	251.7	7.0
15000.0	594.6	5.0	-9.6	33.7	743.2	650.4	266.4	7.4
15500.0	583.6	3.6	-10.5	34.6	733.2	648.7	278.3	8.3
16000.0	572.7	2.2	-11.4	35.6	723.3	647.0	286.4	9.2
16500.0	562.1	.8	-12.3	36.5	713.5	645.4	291.9	10.1
17000.0	551.6	-6	-13.3	37.4	703.9	643.7	298.1	10.5
17500.0	541.4	-2.0	-14.2	38.4	693.4	642.0	307.0	10.4
18000.0	531.2	-3.2	-15.5	38.0	684.6	640.5	324.8	9.9
18500.0	521.1	-4.0	-17.3	34.8	673.8	639.4	348.6	10.3
19000.0	511.1	-4.9	-19.2	31.6	663.1	638.4	354.9	10.7
19500.0	501.3	-5.8	-21.1	28.4	652.7	637.3	358.8	11.0
20000.0	491.7	-6.0	-22.2	26.2	640.6	637.1	346.7	10.1
20500.0	482.2	-6.5	-23.1	25.2	629.4	636.4	334.4	9.7
21000.0	472.7	-7.6	-23.9	25.7	619.8	635.0	331.4	9.6
21500.0	463.4	-8.8	-24.6	26.2	610.2	633.6	328.5	9.5
22000.0	454.3	-9.9	-25.4	26.7	600.9	632.5	326.2	9.4
22500.0	445.4	-11.1	-26.2	27.2	591.7	630.9	325.8	9.2
23000.0	436.7	-12.2	-27.0	27.8	582.6	629.5	321.3	9.0

STATION ALTITUDE 3489.00 FT-ET MSL  
19 JUNE 01 1435 HRS AD  
ASCENSION NO. 399

UPPER AIR DATA  
1700020399  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND GM/CUBIC METER KNOTS	WIND DATA DIRECTION DEGREES TN	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
25500.0	428.1	-13.4	-27.8	28.3	573.7	628.1	8.9
24000.0	419.7	-14.5	-28.8	28.8	565.0	626.7	9.2
24500.0	411.4	-15.7	-29.5	29.3	556.4	625.3	9.5
25000.0	403.4	-16.8	-30.3	29.8	547.9	623.9	9.9
25500.0	395.2	-18.1	-31.1	30.6	539.5	622.4	10.3
26000.0	387.2	-19.4	-31.9	31.6	531.2	620.7	11.2
26500.0	379.2	-20.7	-32.8	32.6	523.1	619.1	12.0
27000.0	371.5	-22.0	-33.6	33.7	515.0	617.5	12.9
27500.0	363.9	-23.3	-34.5	34.7	507.1	615.9	13.8
28000.0	356.4	-24.6	-35.4	35.7	499.4	614.3	14.9
28500.0	349.1	-25.9	-36.3	36.7	491.8	612.7	15.9
29000.0	342.0	-27.2	-37.2	37.8	484.3	611.0	17.5
29500.0	334.8	-28.3	-38.2	37.5	476.2	609.7	19.1
30000.0	327.7	-29.2	-39.3	36.8	468.0	608.5	19.5
30500.0	320.8	-30.2	-40.4	36.1	459.9	607.3	19.3
31000.0	314.0	-31.2	-41.4	35.4	452.1	606.0	18.7
31500.0	307.4	-32.2	-42.5	34.8	444.3	604.8	18.0
32000.0	300.9	-33.2	-43.5	34.1	436.7	603.6	17.8
32500.0	294.4	-34.3	-44.7	33.5	429.3	602.1	18.7
33000.0	288.0	-35.5	-45.9	33.0	422.1	600.7	19.5
33500.0	281.8	-36.6	-47.1	32.5	415.0	599.2	19.2
34000.0	275.7	-37.8	-48.3	31.9	408.0	597.7	18.8
34500.0	269.7	-38.9	-49.5	31.4	401.1	596.2	18.3
35000.0	263.8	-40.1	-51.5	27.9*	394.3	594.8	17.6
35500.0	258.0	-41.2	-56.8	16.3**	387.4	593.4	17.0
36000.0	252.3	-42.3	-67.0	4.7**	380.6	592.0	16.6
36500.0	246.7	-43.2			373.7	590.8	16.0
37000.0	241.1	-44.0			366.7	589.7	15.1
37500.0	235.7	-44.9			359.8	588.6	14.3
38000.0	230.5	-45.7			353.0	587.5	13.1
38500.0	225.3	-46.6			346.4	586.4	11.8
39000.0	220.1	-47.5			339.9	585.2	11.0
39500.0	215.1	-48.5			333.5	584.0	10.8
40000.0	210.2	-49.4			327.2	582.7	11.5
40500.0	205.4	-50.3			321.1	581.5	12.8
41000.0	200.7	-51.3			315.1	580.3	14.2
41500.0	196.0	-52.2			309.1	579.1	15.9
42000.0	191.4	-53.2			303.1	577.8	17.5
42500.0	187.0	-54.1			297.3	576.6	17.9
43000.0	182.6	-55.0			291.6	575.3	17.6

\*\* AT LEAST ONE AIR, SURFACE, OR LATITUDE VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3489.00 FT ET MSL  
19 JUNE 61 1435 HRS WDT  
ASCENSION NO. 399

UPPER AIR DATA  
1700020399  
WHITE SANUS

GEODETIC COORDINATES  
32°40.043 LAT UEG  
106°37.033 LON UEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND METER KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
43500.0	178.3	-56.0			286.0	574.1	313.4
44000.0	174.1	-56.9			280.6	572.8	313.3
44500.0	170.0	-57.9			275.2	571.5	313.7
45000.0	165.9	-58.9			269.8	570.2	316.1
45500.0	161.9	-59.9			264.6	568.9	318.6
46000.0	158.0	-60.9			259.4	567.5	319.6
46500.0	154.2	-61.9			254.4	566.2	320.1
47000.0	150.5	-63.0			249.5	564.8	317.4
47500.0	146.8	-63.7			244.2	563.9	311.2
48000.0	143.2	-64.3			238.9	563.0	306.0
48500.0	139.7	-65.0			233.8	562.1	301.9
49000.0	136.3	-65.6			228.7	561.2	298.4
49500.0	132.9	-66.3			223.8	560.4	298.1
50000.0	129.7	-66.9			219.0	559.5	303.2
50500.0	126.5	-67.5			214.3	558.6	307.6
51000.0	123.3	-68.2			209.5	557.8	313.1
51500.0	120.2	-68.8			204.9	556.9	319.5
52000.0	117.2	-69.4			200.3	556.1	325.7
52500.0	114.2	-70.0			195.9	555.2	327.0
53000.0	111.4	-70.6			191.6	554.4	328.9
53500.0	108.6	-71.3			187.3	553.5	329.2
54000.0	105.8	-71.7			183.1	552.9	327.3
54500.0	103.2	-71.3			178.1	553.5	325.3
55000.0	100.5	-70.9			173.2	554.1	326.5
55500.0	98.0	-70.5			168.5	554.6	327.9
56000.0	95.6	-70.1			164.0	555.2	329.9
56500.0	93.2	-69.6			159.6	555.6	336.6
57000.0	90.9	-69.2			155.3	556.3	343.9
57500.0	88.6	-68.8			151.1	556.9	356.3
58000.0	86.4	-68.4			147.1	557.5	21.1
58500.0	84.3	-68.0			143.1	558.0	50.5
59000.0	82.2	-67.6			139.3	558.6	65.5
59500.0	80.1	-67.1			135.5	559.2	76.3
60000.0	78.0	-66.7			131.9	559.7	84.9
60500.0	76.2	-66.3			128.3	560.3	90.4
61000.0	74.3	-65.9			124.9	560.9	96.7
61500.0	72.5	-65.5			121.6	561.4	104.2
62000.0	70.7	-65.1			118.3	562.0	114.6
62500.0	69.9	-64.5			115.1	562.7	127.9
63000.0	67.3	-63.9			112.0	563.6	134.2

STATION ALTITUDE 3489.00 FEET MSL  
 19 JUNE 81 1435 HRS MDT  
 ASCENSION NO. 399

UPPER AIR DATA  
 1700020399  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
65500.0	65.7	-63.2	109.0	564.4	141.7	3.4	1.000024	
64000.0	64.1	-62.6	106.1	565.3	156.1	1.9	1.000024	
64500.0	62.6	-62.0	103.2	566.1	95.9	3.7	1.000023	
65000.0	61.1	-61.4	100.4	566.9	82.0	6.8	1.000022	
65500.0	59.6	-60.7	97.7	567.0	83.4	10.1	1.000022	
66000.0	58.2	-60.1	95.1	568.6	92.9	13.9	1.000021	
66500.0	56.8	-59.5	92.5	569.5	98.2	18.0	1.000021	
67000.0	55.4	-58.8	90.1	570.3	101.2	18.4	1.000020	
67500.0	54.1	-58.2	87.6	571.1	104.2	16.9	1.000020	
68000.0	52.8	-57.6	85.3	572.0	107.8	15.4	1.000019	
68500.0	51.5	-57.0	83.0	572.8	101.4	12.4	1.000018	
69000.0	50.3	-56.3	80.8	573.6	90.0	9.6	1.000018	
69500.0	49.1	-56.2	78.8	573.8	77.1	8.3	1.000018	
70000.0	47.9	-56.3	77.0	573.7	81.6	10.7	1.000017	
70500.0	46.8	-56.3	75.2	573.7	84.5	13.1	1.000017	
71000.0	45.7	-56.4	73.4	573.6	85.9	15.1	1.000016	
71500.0	44.6	-56.4	71.7	573.5	86.3	16.7	1.000016	
72000.0	43.6	-56.5	70.0	573.5	86.7	18.2	1.000016	
72500.0	42.5	-56.3	68.3	573.7	85.0	19.3	1.000015	
73000.0	41.6	-55.5	66.5	574.7	82.5	20.3	1.000015	
73500.0	40.6	-54.8	64.8	575.7	80.2	21.2	1.000014	
74000.0	39.7	-54.0	63.1	576.7	80.0	23.0	1.000014	
74500.0	38.7	-53.2	61.4	577.7	81.2	25.0	1.000014	
75000.0	37.9	-52.5	59.8	578.7	81.8	27.0	1.000013	
75500.0	37.0	-51.7	58.2	579.7	82.6	27.9	1.000013	
76000.0	36.1	-51.0	56.6	580.7	83.5	28.7	1.000013	
76500.0	35.3	-50.2	55.1	581.7	84.2	29.6	1.000012	
77000.0	34.5	-49.4	53.7	582.7	86.0	29.5	1.000012	
77500.0	33.7	-48.7	52.3	583.7	89.3	29.3	1.000012	
78000.0	32.9	-48.0	50.9	584.7	92.1	29.1	1.000011	
78500.0	32.2	-47.6	49.7	585.1	93.9	28.6	1.000011	
79000.0	31.4	-47.3	48.5	585.4	95.5	28.0	1.000011	
79500.0	30.7	-47.1	47.3	585.8	97.1	27.4	1.000011	
80000.0	30.0	-46.8	46.2	586.1	94.4	26.3	1.000010	
80500.0	29.4	-46.7	45.2	586.2	89.1	25.2	1.000010	
81000.0	28.7	-46.6	44.1	586.3	83.4	24.3	1.000010	
81500.0	28.0	-46.5	43.1	586.4	84.2	23.9	1.000010	
82000.0	27.4	-46.5	42.1	586.6	90.6	24.0	1.000009	
82500.0	26.8	-46.4	41.2	586.7	96.9	24.4	1.000009	
83000.0	26.2	-46.3	40.2	586.8	103.0	25.1	1.000009	

STATION ALTITUDE 3989.00 FEET ASL  
 19 JUNE 61 1435 HRS MDT  
 ASCENSION NO. 399

UPPER AIR DATA  
 1700020399  
 WHITE SANDS  
 TABLE 7 CON'T

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	SOUND METER KNOTS	WIND DATA		INDEX OF REFRACTION
						GM/CURRIC	DIRECTION DEGREES (TN)	
8350.0	25.6	-46.2		39.3	586.9	109.1	26.1	1.000009
8400.0	25.0	-46.1		38.4	587.0	114.6	27.3	1.000009
8450.0	24.5	-46.0		37.5	587.1	119.0	28.7	1.000008
8500.0	23.9	-45.9		36.7	587.2	116.3	27.1	1.000008
8550.0	23.4	-45.9		35.8	587.3	112.6	25.5	1.000008
8600.0	22.9	-45.6		35.0	587.6	108.4	24.0	1.000008
8650.0	22.3	-45.0		34.1	588.4			1.000008
8700.0	21.9	-44.4		33.3	589.3			1.000007
8750.0	21.4	-43.7		32.4	590.1			1.000007
8800.0	20.9	-43.1		31.6	590.9			1.000007
8850.0	20.4	-42.5		30.8	591.7			1.000007

STATION ALTITUDE 3989.00 FT Elevation  
19 JUNE 81 1435 HRS MDT  
ASCENSION NO. 399

MANDATORY LEVELS  
1700020399  
WHITE SANDS  
TABLE 8

GEODETIC COORDINATES  
52.40043 LAT DEG  
106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEGREES CENTIGRADE	DEWPNT CENTIGRADE	REL.HUM. PERCENT	WIND DATA	
						DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4944.	33.1	10.4	25.	128.4	1.3	
800.0	6723.	28.1	7.2	27.	212.3	2.7	
750.0	8583.	22.9	3.7	29.	227.0	2.6	
700.0	10534.	17.2	-0.1	31.	236.7	7.3	
650.0	12588.	11.7	-4.9	31.	223.3	8.2	
600.0	14761.	5.7	-9.2	33.	259.8	7.2	
550.0	17070.	-0.8	-13.4	38.	299.6	10.5	
500.0	19541.	-5.9	-21.4	28.	357.5	10.9	
450.0	22232.	-10.5	-25.8	27.	325.0	9.3	
400.0	25168.	-17.3	-30.7	30.	313.5	10.0	
350.0	28398.	-25.7	-36.2	37.	330.8	15.8	
300.0	32005.	-33.3	-43.7	34.	320.6	17.9	
250.0	36124.	-42.7			319.2	16.4	
200.0	40974.	-51.4			307.2	14.4	
175.0	43785.	-56.7			313.3	15.8	
150.0	46944.	-65.1			316.7	11.6	
125.0	50532.	-67.8			309.5	20.4	
100.0	54934.	-70.8			326.7	11.6	
80.0	59313.	-67.1			75.9	11.0	
70.0	61971.	-64.9			118.1	7.4	
60.0	65086.	-60.9			78.5	8.6	
50.0	68845.	-56.2			87.8	9.2	
40.0	73501.	-54.3			80.2	22.1	
30.0	79673.	-46.8			94.6	26.4	
25.0	83645.	-46.1			114.4		
20.0	88545.	-41.9			27.3		

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL  
19 JUNE 81 1530 HRS MDT  
ASCENSION NO. 129

SIGNIFICANT LEVEL DATA  
1700180129  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE FEET MSL	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
874.4	4051.4	39.0	-1.2	8.0
867.7	4281.8	35.7	6.0	16.0
848.4	4950.9	34.0	4.6	16.0
700.0	10509.0	18.8	-6.0	18.0
666.0	11899.1	13.9	-9.3	19.0
619.0	13904.2	8.1	-11.8	23.0
574.4	15910.9	2.2	-13.1	31.0
548.4	17134.8	-5.5	-16.3	29.0
506.8	19187.8	-5.9	-23.6	23.0
500.0	19535.5	-6.2	-26.0	19.0
482.0	20478.3	-6.5	-27.4	17.0
450.0	22231.7	-10.2	-30.5	17.0
419.4	24003.1	-14.2	-32.7	19.0
400.0	25177.9	-17.5	-35.5	19.0
340.0	29106.4	-27.4	-39.3	31.0
300.0	32037.3	-33.3	-45.8	27.0
282.2	33442.7	-36.6	-49.4	25.0
270.2	34427.6	-39.8		
250.0	36162.5	-43.6		
230.6	37940.7	-46.4		
200.0	41021.9	-51.4		
190.0	42113.0	-54.2		
167.2	44791.2	-58.1		
158.8	45853.4	-61.4		
150.0	47014.0	-63.3		

STATION ALTITUDE 4051.37 FEET MSL  
19 JUNE 81 1500 HRS MDT  
ASCENSION NO. 129

UPPER AIR DATA  
1700180129  
LC-37

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
4051.4	874.4	39.0	-1.2	8.0	973.5	689.1	210.0
4500.0	861.4	35.1	5.6	16.0	969.4	685.4	213.3
5000.0	847.0	33.9	4.6	16.0	957.4	683.9	217.6
5500.0	832.4	32.5	3.6	16.2	945.4	682.3	222.8
6000.0	818.2	31.1	2.7	16.4	933.5	680.7	229.0
6500.0	804.1	29.8	1.7	16.6	921.8	679.1	236.4
7000.0	790.3	28.4	.8	16.7	910.2	677.6	245.0
7500.0	776.8	27.0	-2	16.9	898.8	676.0	252.6
8000.0	763.5	25.7	-1.1	17.1	887.6	674.4	261.1
8500.0	750.4	24.3	-2.1	17.3	876.5	672.8	274.8
9000.0	737.5	22.9	-3.0	17.5	865.6	671.2	293.0
9500.0	724.9	21.6	-4.0	17.6	854.8	669.6	326.4
10000.0	712.4	20.2	-5.0	17.8	844.2	668.0	19.5
10500.0	700.2	18.8	-6.0	18.0	833.7	666.4	4.6
11000.0	687.8	17.1	-7.2	18.4	824.0	664.3	260.9
11500.0	675.6	15.3	-8.3	18.7	814.4	662.3	251.6
12000.0	663.6	13.6	-9.4	19.2	804.7	660.3	249.8
12500.0	651.6	12.2	-10.0	20.2	794.2	658.6	251.4
13000.0	639.8	10.7	-10.6	21.2	783.9	656.9	252.3
13500.0	628.2	9.3	-11.2	22.2	773.7	655.2	255.2
14000.0	616.8	7.8	-11.8	23.4	763.6	653.5	258.4
14500.0	605.4	6.3	-12.0	25.4	753.4	651.8	260.1
15000.0	594.2	4.9	-12.3	27.4	743.4	650.1	262.4
15500.0	583.3	3.4	-12.8	29.4	733.6	648.4	280.0
16000.0	572.5	2.0	-13.4	30.9	723.7	646.7	294.4
16500.0	561.7	.9	-14.7	36.0	713.1	645.4	311.3
17000.0	551.2	-2	-16.0	29.2	702.7	644.0	329.6
17500.0	540.8	-1.5	-17.6	27.9	692.6	642.5	347.7
18000.0	530.5	-2.8	-19.4	26.5	682.8	640.9	9.1
18500.0	520.4	-4.1	-21.1	25.0	673.2	639.3	25.2
19000.0	510.5	-5.4	-22.9	23.5	663.7	637.7	22.0
19500.0	500.7	-6.2	-25.7	19.4	653.0	635.0	16.1
20000.0	491.0	-6.3	-26.7	18.0	640.8	636.5	359.3
20500.0	481.6	-6.5	-27.5	17.0	629.0	636.3	340.6
21000.0	472.2	-7.6	-28.4	17.0	619.2	635.0	321.7
21500.0	463.1	-8.7	-29.2	17.0	609.7	633.7	313.6
22000.0	454.1	-9.7	-30.1	17.0	600.2	632.4	309.5
22500.0	445.2	-10.8	-30.8	17.3	591.0	631.1	309.4
23000.0	436.5	-11.9	-31.4	17.9	581.9	629.8	308.0
23500.0	427.9	-13.1	-32.1	18.4	572.9	628.4	304.8

STATION ALTITUDE 4051.37 FEET <sup>SL</sup>  
 19 JUNE 81 1530 HRS MDT  
 ASCENSION NO. 129

UPPER AIR DATA  
 1700180129  
 LC-37  
 TABLE 10 CON'T

GEOGRAPHIC COORDINATES  
 32°40'17" LAT DEG  
 106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	419.5	-14.2	-32.7	19.0	564.1	627.0	301.8	10.1
24500.0	411.1	-15.6	-33.9	19.0	555.9	625.3	299.4	10.5
25000.0	402.9	-17.0	-35.1	19.0	547.8	623.6	301.5	10.8
25500.0	394.7	-18.3	-35.7	20.0	539.4	622.0	305.5	11.0
26000.0	386.6	-19.6	-36.0	21.5	531.0	620.5	312.5	11.2
26500.0	378.7	-20.8	-36.4	23.0	522.7	618.9	321.9	11.6
27000.0	371.0	-22.1	-36.9	24.6	514.6	617.4	329.6	12.3
27500.0	363.4	-23.4	-37.4	26.1	506.6	615.8	334.6	13.0
28000.0	355.9	-24.6	-37.9	27.6	498.8	614.2	338.9	13.6
28500.0	348.6	-25.9	-38.5	29.1	491.0	612.7	341.3	12.7
29000.0	341.5	-27.1	-39.1	30.7	483.5	611.1	344.0	11.7
29500.0	334.3	-28.2	-40.2	30.5	475.4	609.8	342.8	12.4
30000.0	327.3	-29.2	-41.3	29.8	467.3	608.5	340.8	13.5
30500.0	320.4	-30.2	-42.4	29.1	459.3	607.3	338.3	16.1
31000.0	313.6	-31.2	-43.5	28.4	451.5	606.0	336.4	18.8
31500.0	307.0	-32.2	-44.6	27.7	443.8	604.7	330.8	19.8
32000.0	300.5	-33.2	-45.7	27.1	436.2	603.5	325.9	21.0
32500.0	294.0	-34.4	-47.0	26.3	428.9	602.0	323.5	21.1
33000.0	287.7	-35.6	-48.2	25.6	421.8	600.5	322.1	20.3
33500.0	281.5	-36.8	-50.0	23.5**	414.8	599.0	326.3	15.7
34000.0	275.3	-38.4	-57.8	10.9**	408.6	596.9	331.0	12.2
34500.0	269.3	-40.0			402.3	594.9	330.3	11.3
35000.0	263.4	-41.1			395.3	593.5	327.4	11.3
35500.0	257.5	-42.1			388.4	592.1	321.4	13.3
36000.0	251.8	-43.2			381.6	590.7	316.5	14.5
36500.0	246.2	-44.1			374.5	589.6	319.3	14.0
37000.0	240.7	-44.9			367.3	588.5	320.2	13.7
37500.0	235.3	-45.7			360.3	587.5	321.2	13.6
38000.0	230.0	-46.5			353.5	586.5	318.2	13.5
38500.0	224.7	-47.3			346.6	585.5	309.4	13.9
39000.0	219.6	-48.1			339.9	584.4	303.4	14.5
39500.0	214.6	-48.9			333.4	583.4	300.5	15.2
40000.0	209.7	-49.7			326.9	582.3	303.4	16.2
40500.0	204.9	-50.6			320.6	581.2	311.7	17.5
41000.0	200.2	-51.4			314.5	580.2	312.2	18.9
41500.0	195.6	-52.6			308.9	578.5	304.6	20.3
42000.0	191.0	-53.9			303.5	576.8	302.4	21.8
42500.0	186.5	-54.8			297.5	575.7	306.7	23.3
43000.0	182.1	-55.5			291.5	574.8	310.3	24.1
43500.0	177.8	-56.2			285.6	573.8	313.8	23.2

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL  
 19 JUNE 81 15 30 HRS MDT  
 ASCENSION NO. 129

UPPER AIR DATA  
 1700180129  
 LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

TABLE 10 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	SPEED OF SOUND METER KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
44000.0	173.6	-56.9		279.8	572.8	316.3	22.3
44500.0	169.5	-57.7		274.1	571.9	311.2	20.8
45000.0	165.5	-58.7		268.9	570.4	305.2	19.5
45500.0	161.5	-60.3		264.4	568.4		1.000059
46000.0	157.7	-61.6		259.7	566.6		1.000058
46500.0	153.8	-62.5		254.4	565.5		1.000057
47000.0	150.1	-63.5		249.2	564.4		1.000055

STATION ALTITUDE 4051.37 FEET MSL  
 19 JUNE 81 1530 HRS MDT  
 ASCENSION NO. 129

MANDATORY LEVELS

1700180129

LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES	DEWPNT CENTIGRADE	DIRECTION DEGREES (TN)		SPEED KNOTS	
850.0	4891.	34.1	4.8	16.	216.6	4.4	
800.0	6674.	29.4	1.5	17.	239.3	3.2	
750.0	8540.	24.3	-2.1	17.	276.4	1.6	
700.0	10499.	18.0	-6.0	18.	3.3	.5	
650.0	12556.	12.0	-10.0	20.	251.6	9.4	
600.0	14728.	5.6	-12.2	26.	261.1	8.2	
550.0	17036.	-3	-16.1	29.	331.4	8.8	
500.0	19508.	-6.2	-26.0	19.	15.3	9.0	
450.0	22197.	-10.2	-30.5	17.	309.5	10.2	
400.0	25135.	-17.5	-35.5	19.	302.9	10.9	
350.0	28364.	-25.6	-38.4	29.	340.8	12.9	
300.0	31972.	-33.5	-45.8	27.	325.8	21.0	
250.0	36082.	-43.6			318.8	14.4	
200.0	40921.	-51.4			312.2	18.9	
175.0	43728.	-56.7			316.2	22.7	
150.0	46455.	-63.3					

STATION ALTITUDE 3989.00 FEET MSL  
19 JUNE 81 1630 HRS MDT  
ASCENSION NO. 400

SIGNIFICANT LEVEL DATA  
1700020100  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 12

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE METERS MSL	TEMPERATURE			REL.HUM. PERCENT
		DEGREES	AIR DEWPOINT DEGREES CENTIGRADE	DEGREES	
876.6	3989.0	37.5	10.0	19.0	
850.0	4910.0	34.6	7.6	19.0	
769.0	7847.1	26.4	•9	19.0	
700.0	10522.8	17.2	-5.3	21.0	
634.4	13246.2	10.4	-9.8	25.0	
558.2	16686.6	•8	-12.5	36.0	
517.6	18661.2	-4.8	-16.9	32.0	
500.0	19556.1	-4.8	-23.7	21.0	
463.2	21516.7	-9.4	-28.1	20.0	
440.6	22784.1	-11.2	-28.6	22.0	
400.0	25195.2	-17.7	-32.5	26.0	
344.3	28825.3	-26.5	-37.0	36.0	
300.0	32061.2	-32.6	-44.5	29.0	
279.4	33693.7	-37.9	-49.5	28.0	
267.6	34667.5	-40.5			
250.0	36186.3	-43.0			
200.0	41045.4	-52.0			
150.0	47038.3	-62.6			

STATION ALTITUDE 3989.00 FEET MSL  
 19 JUNE 81 1630 HRS MDT  
 ASCENSION NO. 400

UPPER AIR DATA  
 17000020400  
 WHITE SANUS

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWEPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SOUND KNOTS	DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3989.0	876.6	37.5	10.0	19.0	977.8	688.5	180.0	7.0
4000.0	876.3	37.5	9.9	19.0	977.6	688.4	180.0	7.0
4500.0	861.7	35.9	8.7	19.0	966.6	686.6	179.5	9.2
5000.0	847.4	34.3	7.4	19.0	955.6	684.7	179.2	11.3
5500.0	833.1	33.0	6.3	19.0	944.0	683.1	178.9	13.4
6000.0	819.0	31.6	5.1	19.0	932.5	681.4	178.6	15.5
6500.0	805.1	30.2	4.0	19.0	921.2	679.8	178.9	15.7
7000.0	791.5	28.8	2.9	19.0	910.0	678.1	179.2	14.2
7500.0	776.2	27.4	1.7	19.0	899.0	676.5	179.9	12.7
8000.0	764.9	25.9	.6	19.1	888.3	674.7	181.5	11.0
8500.0	751.6	24.2	-.5	19.5	878.0	672.7	183.7	9.4
9000.0	738.5	22.4	-1.7	19.9	867.9	670.7	186.5	8.0
9500.0	725.6	20.7	-2.9	20.2	858.0	668.7	189.9	7.1
10000.0	713.0	19.0	-4.0	20.6	848.1	666.7	194.2	6.3
10500.0	700.6	17.3	-5.2	21.0	838.4	664.7	199.2	5.3
11000.0	688.0	16.0	-5.8	21.7	827.1	663.2	205.6	4.0
11500.0	675.7	14.8	-6.5	22.4	815.9	661.7	217.3	2.9
12000.0	663.6	13.5	-7.1	23.2	804.8	660.3	227.3	3.3
12500.0	651.7	12.3	-7.7	23.9	793.9	658.8	233.4	4.0
13000.0	640.1	11.0	-8.4	24.6	783.2	657.3	224.3	6.2
13500.0	628.4	9.7	-8.9	25.8	772.6	655.8	210.9	8.1
14000.0	616.9	8.3	-9.4	27.4	762.1	654.2	218.0	7.7
14500.0	605.5	6.9	-9.9	29.0	751.8	652.5	216.4	7.5
15000.0	594.3	5.5	-10.4	30.6	741.7	650.9	229.6	8.2
15500.0	583.4	4.1	-11.0	32.2	731.7	649.2	247.5	10.9
16000.0	572.6	2.7	-11.6	33.8	721.9	647.6	255.8	12.2
16500.0	562.1	1.3	-12.3	35.4	712.3	645.9	265.2	11.3
17000.0	551.5	-.1	-13.6	35.4	702.6	644.2	285.0	9.4
17500.0	541.1	-1.5	-15.2	34.4	693.0	642.5	305.5	8.6
18000.0	530.9	-2.9	-16.8	33.3	683.6	640.8	326.7	8.8
18500.0	520.8	-4.3	-18.4	32.3	674.2	639.1	339.8	9.2
19000.0	510.9	-4.8	-20.5	27.8	662.6	638.5	351.2	10.0
19500.0	501.1	-4.8	-23.4	21.7	650.0	638.4	348.4	10.8
20000.0	491.4	-5.8	-24.7	20.8	640.0	637.1	346.0	11.6
20500.0	481.9	-7.0	-25.8	20.5	630.5	635.7	340.3	12.1
21000.0	472.6	-8.2	-27.0	20.3	621.1	634.3	333.9	12.6
21500.0	463.5	-9.4	-28.1	20.0	611.8	632.9	330.8	12.8
22000.0	454.4	-10.1	-28.3	20.8	601.5	632.0	329.0	12.8
22500.0	445.6	-10.8	-28.5	21.6	591.4	631.2	326.4	12.4
23000.0	436.8	-11.8	-29.0	22.4	581.9	630.0	323.4	11.9

STATION ALTITUDE 3989.00 FEET MSL  
19 JUNE 81 1630 HRS MDT  
ASCENSION NO. 400

UPPER AIR DATA  
1700020400  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN)	INDEX OF REFRACTION
23500.0	426.1	-13.1	-29.7	23.2	573.3	628.3	316.4	11.1
24000.0	419.6	-14.5	-30.5	24.0	564.9	626.7	307.6	10.5
24500.0	411.3	-15.8	-31.3	24.8	550.6	625.1	303.3	10.3
25000.0	403.1	-17.2	-32.2	25.7	548.4	623.4	299.7	10.2
25500.0	395.0	-18.4	-32.8	26.8	540.0	621.9	304.9	10.1
26000.0	386.9	-19.7	-33.4	28.2	531.5	620.4	311.2	10.2
26500.0	379.0	-20.9	-33.9	29.6	523.2	618.9	319.4	10.5
27000.0	371.3	-22.1	-34.6	31.0	515.0	617.4	327.6	10.9
27500.0	363.7	-23.3	-35.2	32.3	506.9	615.9	332.4	10.5
28000.0	356.2	-24.5	-35.9	33.7	499.0	614.4	336.4	9.7
28500.0	349.0	-25.7	-36.6	35.1	491.2	612.9	341.0	9.9
29000.0	341.7	-26.8	-37.4	35.6	483.2	611.5	345.0	10.9
29500.0	334.6	-27.8	-38.6	34.5	474.9	610.3	346.8	12.5
30000.0	327.5	-28.7	-39.7	33.5	466.7	609.1	346.5	14.7
30500.0	320.6	-29.7	-40.9	32.4	458.6	608.0	347.4	15.6
31000.0	313.9	-30.6	-42.0	31.3	450.7	606.8	349.4	15.5
31500.0	307.3	-31.5	-43.2	30.2	442.9	605.6	353.7	14.2
32000.0	300.8	-32.5	-44.4	29.1	435.3	604.4	358.1	12.6
32500.0	294.3	-34.0	-45.9	28.7	428.7	602.5	40.0	10.3
33000.0	288.0	-35.6	-47.4	28.4	422.4	600.4	8.1	7.8
33500.0	281.8	-37.3	-48.9	28.1	416.1	598.4	9.5	6.1
34000.0	275.6	-38.7	-53.4	19.2**	409.6	596.5	10.0	4.6
34500.0	269.6	-40.1	-65.2	4.8**	402.9	594.8	358.1	4.3
35000.0	263.6	-41.0			395.7	593.5	344.8	4.7
35500.0	257.8	-41.9			388.3	592.5	341.7	6.1
36000.0	252.1	-42.7			381.1	591.4	341.4	7.7
36500.0	246.4	-43.6			373.9	590.3	341.1	9.7
37000.0	240.8	-44.5			366.9	589.1	340.8	11.8
37500.0	235.4	-45.4			360.1	587.9	337.8	13.1
38000.0	230.0	-46.4			353.3	586.7	334.0	14.0
38500.0	224.8	-47.3			346.7	585.5	329.1	14.3
39000.0	219.7	-48.2			340.2	584.3	322.7	14.0
39500.0	214.7	-49.1			333.9	583.1	316.2	14.3
40000.0	209.8	-50.1			327.7	581.9	310.4	15.5
40500.0	205.1	-51.0			321.6	580.7	306.0	16.8
41000.0	200.4	-51.9			315.6	579.5	305.7	18.2
41500.0	195.7	-52.8			309.4	578.3	305.5	19.6
42000.0	191.0	-53.7			303.3	577.1	309.0	20.0
42500.0	186.5	-54.6			297.3	575.9	312.6	20.4
43000.0	182.1	-55.5			291.5	574.7	315.1	19.4

\*\* AT LEAST ONE OF THE PREVIOUS ALTITUDES WAS UNKNOWN. THE ALTITUDE WAS USED IN COMPUTATION.

STATION ALTITUDE 3989.00 FEET MSL  
19 JUNE 81 1630 HRS MDT  
ASCENSION NO. 400

UPPER AIR DATA  
1700020400  
WHITE SANDS

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
43500.0	177.8	-56.4	285.7	573.5	317.4	17.8
44000.0	175.6	-57.3	280.1	572.3	318.3	15.8
44500.0	169.4	-58.2	274.6	571.1	315.5	15.1
45000.0	165.4	-59.1	269.3	569.9	311.3	10.4
45500.0	161.5	-60.0	264.0	568.7		
46000.0	157.7	-60.9	258.8	567.5		
46500.0	153.9	-61.8	253.7	566.3		
47000.0	150.3	-62.7	248.8	565.1		

STATION ALTITUDE 3989.00 FEET MSL  
 19 JUNE 81 1030 HRS MDT  
 ASCENSION NO. 400

MANDATORY LEVELS  
 1700020400  
 WHITE SANDS

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPNT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4906.	34.6	74.6	19.	179.2	10.9
800.0	6692.	29.6	3.6	19.	179.0	15.2
750.0	8560.	24.0	7	20.	184.0	9.2
700.0	10512.	17.2	5.3	21.	199.3	5.2
650.0	12566.	12.1	7.8	24.	234.1	4.1
600.0	14742.	6.2	10.1	30.	223.4	7.8
550.0	17054.	-.3	-13.8	35.	288.1	9.3
500.0	19528.	-4.8	-23.7	21.	348.2	10.9
450.0	22216.	-10.4	-28.4	21.	327.9	12.7
400.0	25152.	-17.7	-32.5	26.	300.9	10.1
350.0	28381.	-25.5	-36.5	35.	340.3	9.7
300.0	31996.	-32.6	-44.5	29.	341.3	12.5
250.0	36106.	-43.0			305.7	8.3
200.0	40944.	-52.0			319.0	18.2
175.0	43750.	-57.0				
150.0	46909.	-62.8				

GEODLTIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

STATION ALTITUDE 4051.37 FEET MSL  
19 JUNE 61 1730 HRS MDT  
ASCENSION NO. 130

SIGNIFICANT LEVEL DATA  
1700180130  
LC-37  
TABLE 15

GEODETIC COORDINATES  
32°40'17.5 LAT DEG  
106°31'23.2 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	
				REL. HUM. PERCENT	REL. HUM. PERCENT
673.3	4051.4	37.5	-6.1	6.0	
850.0	4858.9	35.3	5.7	16.0	
777.8	7470.9	28.0	-1	16.0	
700.0	10486.7	19.0	-7.4	16.0	
673.6	11563.1	15.5	-10.2	16.0	
575.6	15841.9	2.8	-16.2	23.0	
515.6	18730.9	-4.6	-22.5	23.0	
500.0	19525.2	-5.2	-26.4	17.0	
483.2	20405.8	-6.4	-26.0	16.0	
459.6	21688.7	-8.3	-29.6	16.0	
444.4	22543.7	-10.5	-31.4	16.0	
421.8	23856.8	-13.5	-33.5	17.0	
400.0	25174.6	-17.3	-35.3	19.0	
350.8	28356.6	-26.1	-39.5	27.0	
337.6	29267.4	-27.7	-39.9	30.0	
318.2	30661.7	-30.0	-45.6	20.0	
300.0	32033.8	-33.2	-49.3	18.0	
269.2	34509.7	-39.2			
250.0	36168.3	-42.4			
240.8	36999.3	-44.5			
230.0	38008.6	-45.9			
200.0	41033.4	-51.9			
172.4	44175.2	-56.1			
149.4	47126.1	-63.4			

STATION ALTITUDE 4051.37 FEET <sup>15L</sup>  
 19 JUNE 81 1700 HRS MDT  
 ASCENSION NO. 130

UPPER AIR DATA  
 1700130130  
 LC-37  
 TABLE 16

GEODETIC COORDINATES  
 32°40'17.5" LAT DEG  
 106°31'23.2" LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE C	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	879.3	37.5	-6.1	6.0	977.7	687.2	200.0	4.9	1.000233
4500.0	860.3	36.3	1.8	11.6	965.6	686.3	200.6	5.4	1.000243
5000.0	845.9	34.9	5.4	16.0	952.8	685.1	201.1	6.0	1.000248
5500.0	831.7	33.5	4.3	16.0	941.2	683.5	201.5	6.6	1.000243
6000.0	817.7	32.1	3.1	16.0	929.0	681.9	201.9	7.2	1.000238
6500.0	803.9	30.7	2.0	16.0	918.6	680.2	202.2	7.8	1.000234
7000.0	790.3	29.3	.9	16.0	907.4	678.6	204.2	8.0	1.000229
7500.0	777.0	27.9	-.2	16.0	896.5	677.0	207.8	7.9	1.000225
8000.0	763.6	26.4	-1.4	16.0	885.5	675.2	211.5	7.8	1.000221
8500.0	750.3	24.9	-2.6	16.0	874.7	673.5	213.3	7.9	1.000216
9000.0	737.3	23.4	-3.8	16.0	864.0	671.7	214.5	8.1	1.000212
9500.0	724.6	21.9	-5.0	16.0	853.5	670.0	215.6	8.3	1.000209
10000.0	712.0	20.5	-6.2	16.0	843.1	668.2	214.0	8.0	1.000205
10500.0	699.7	19.0	-7.4	16.0	832.8	666.5	210.6	7.4	1.000201
11000.0	687.3	17.3	-8.7	16.0	822.8	664.6	206.7	6.9	1.000198
11500.0	675.1	15.7	-10.0	16.0	812.9	662.6	204.5	6.4	1.000194
12000.0	662.9	14.2	-10.7	16.7	802.4	660.9	204.7	5.8	1.000191
12500.0	650.8	12.7	-11.3	17.5	791.9	659.2	217.9	5.8	1.000188
13000.0	639.0	11.2	-11.9	18.4	781.6	657.4	239.3	7.1	1.000186
13500.0	627.3	9.8	-12.6	19.2	771.4	655.7	243.9	8.5	1.000183
14000.0	615.9	8.3	-13.3	20.0	761.4	654.0	244.5	9.8	1.000180
14500.0	604.7	6.8	-14.1	20.8	751.6	652.2	252.1	10.0	1.000177
15000.0	593.7	5.3	-14.9	21.6	741.8	650.5	261.1	10.2	1.000175
15500.0	582.9	3.8	-15.7	22.4	732.3	648.7	278.4	9.8	1.000172
16000.0	572.1	2.4	-16.5	23.0	722.6	647.0	294.6	10.0	1.000169
16500.0	561.3	1.1	-17.7	23.0	712.3	645.5	309.1	10.2	1.000166
17000.0	550.8	-.2	-18.8	23.0	702.2	644.0	317.3	10.6	1.000163
17500.0	540.4	-1.4	-19.8	23.0	692.2	642.4	323.0	10.0	1.000161
18000.0	530.2	-2.7	-20.9	23.0	682.4	640.9	338.6	11.4	1.000158
18500.0	520.2	-4.0	-22.0	23.0	672.8	639.4	352.0	12.7	1.000155
19000.0	510.3	-4.8	-23.7	21.0	662.0	638.4	354.5	13.9	1.000152
19500.0	500.5	-5.2	-26.2	17.2	650.3	637.9	354.9	14.0	1.000149
20000.0	490.9	-5.8	-27.3	16.5	637.4	637.1	346.9	14.6	1.000146
20500.0	481.4	-6.5	-28.1	16.0	628.8	636.3	334.4	14.3	1.000143
21000.0	472.1	-7.3	-28.7	16.0	618.3	635.4	330.2	14.6	1.000141
21500.0	463.0	-8.0	-29.3	16.0	608.1	634.5	329.0	14.6	1.000139
22000.0	454.0	-9.1	-30.2	16.0	598.7	633.2	322.4	13.8	1.000136
22500.0	445.2	-10.4	-31.3	16.0	590.0	631.0	319.1	12.7	1.000134
23000.0	436.4	-11.6	-32.1	16.3	581.2	630.1	315.4	11.5	1.000132
23500.0	427.8	-12.9	-34.7	16.7	572.5	625.6	311.7	10.0	1.000126

STATION ALTITUDE 4051.37 FEET MSL  
19 JUNE 81 1730 HRS MDT  
ASCENSION NO. 130

UPPER AIR DATA  
1700180130  
LC-37

TABLE 16 CON'T

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL.HUM. PERCENT	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
CENTIGRADE	METER	GM/CUBIC METER	METER	KNOTS	KNOTS	
24000.0	419.4	-14.2	-33.7	17.2	564.0	627.0
24500.0	411.0	-15.5	-34.4	18.0	555.6	625.4
25000.0	402.8	-16.8	-35.1	18.7	547.3	623.8
25500.0	394.7	-18.2	-35.7	19.8	539.1	622.1
26000.0	386.6	-19.6	-36.2	21.3	531.0	620.4
26500.0	378.7	-21.0	-36.8	22.3	523.0	618.7
27000.0	371.0	-22.3	-37.5	23.6	515.2	617.0
27500.0	363.4	-23.7	-38.2	24.8	507.5	615.3
28000.0	356.0	-25.1	-38.9	26.1	499.9	613.6
28500.0	348.7	-26.4	-39.5	27.5	492.1	612.1
29000.0	341.4	-27.2	-39.7	29.1	483.6	611.0
29500.0	334.3	-28.1	-40.7	28.3	475.1	609.9
30000.0	327.3	-28.9	-42.7	24.7	466.7	608.9
30500.0	320.4	-29.7	-44.9	21.2	458.5	607.9
31000.0	313.6	-30.8	-46.5	19.5	450.7	606.5
31500.0	307.0	-32.0	-47.8	18.8	443.3	605.1
32000.0	300.4	-33.1	-49.2	18.0	436.0	603.6
32500.0	293.9	-34.3	-52.0	14.6**	428.7	602.1
33000.0	287.6	-35.5	-55.3	11.0**	421.6	600.5
33500.0	281.4	-36.8	-59.5	7.3**	414.6	599.0
34000.0	275.3	-38.0	-65.5	3.7**	407.7	597.5
34500.0	269.3	-39.2	-90.6	.1**	401.0	595.9
35000.0	263.4	-40.1			393.8	594.7
35500.0	257.6	-41.1			386.7	593.4
36000.0	251.9	-42.1			379.7	592.2
36500.0	246.3	-43.2			373.2	590.7
37000.0	240.8	-44.5			366.9	589.1
37500.0	235.4	-45.2			359.7	588.2
38000.0	230.1	-45.9			352.7	587.3
38500.0	224.8	-46.9			346.1	586.0
39000.0	219.7	-47.9			339.7	584.7
39500.0	214.7	-48.9			333.4	583.4
40000.0	209.8	-49.9			327.3	582.2
40500.0	205.0	-50.8			321.2	580.9
41000.0	200.3	-51.8			315.3	579.6
41500.0	195.6	-52.5			308.9	578.7
42000.0	191.1	-53.2			302.6	577.8
42500.0	186.6	-53.9			296.4	576.9
43000.0	182.2	-54.5			290.4	576.0
43500.0	178.0	-55.2			284.5	575.1

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET : SL  
19 JUNE 61 1730 HRS MDT  
ASCENSION NO. 130

UPPER AIR DATA  
1700180130  
LC-37  
TABLE 16 CON'T

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
44000.0	173.8	-55.9		278.7	574.3	328.0	20.0	1.000062
44500.0	169.7	-56.9		273.4	572.9	320.9	18.9	1.000061
45000.0	165.6	-58.1		268.4	571.2	311.9	18.2	1.000060
45500.0	161.7	-59.4		263.5	569.6			1.000059
46000.0	157.8	-60.6		258.6	568.0			1.000058
46500.0	154.0	-61.9		253.9	566.3			1.000057
47000.0	150.3	-63.1		249.3	564.6			1.000056

STATION ALTITUDE 4051.37 FEET MSL  
 19 JUNE 81  
 ASCENSION NO. 130

MANDATORY LEVELS  
 1700180130  
 LC-37

GEODETIC COORDINATES  
 32°40'17.5" LAT DEG  
 106°31'23.2" LONG DEG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA	
					WIND DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4855.	35.3	5.7	16.	201.0	5.8
800.0	6644.	30.3	1.7	16.	202.3	7.9
750.0	8515.	24.9	-2.6	16.	213.4	7.9
700.0	10476.	19.0	-7.4	16.	210.7	7.4
650.0	12537.	12.6	-11.3	18.	220.2	5.9
600.0	14713.	6.2	-14.4	21.	255.4	10.2
550.0	17023.	-0.3	-18.8	23.	317.7	10.6
500.0	19497.	-5.2	-26.4	17.	355.0	15.0
450.0	22191.	-9.7	-30.7	16.	320.7	13.4
400.0	25132.	-17.3	-35.3	19.	308.1	10.1
350.0	28358.	-26.2	-39.5	27.	326.8	11.7
300.0	31969.	-33.2	-49.3	18.	39.6	7.6
250.0	36088.	-42.4			345.6	7.9
200.0	40933.	-51.9			316.3	20.0
175.0	43747.	-55.7			326.8	
150.0	46916.	-63.2				19.9

